



2.1 Quadratic ExpressionsExpression a math sentence made up of termsterms are separated by a '+' or '-' signlike terms have the same variables with the same exponentslike: $7x^2, -3/4x^2, 752x^2$ not like: $7x^2, 7x^3, 5x^2y$ 

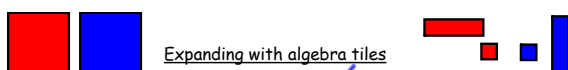
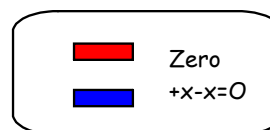
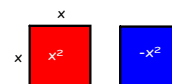
you can only collect like terms

Algebra tiles

(area representations)

Red = positive

Blue = negative

Expanding with algebra tiles

We can think of expressions broken into equal groups

$$4(x+1) = 4x+4$$

four groups of
 $x+1$ 

four x's and four 1's

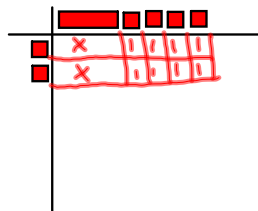
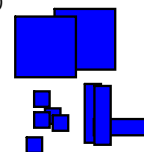
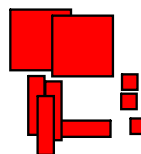
is

Now you try:

$$3(x-2) = \underline{3x-6}$$

$$2(x^2+4) = \underline{2x^2+8}$$

Factoring

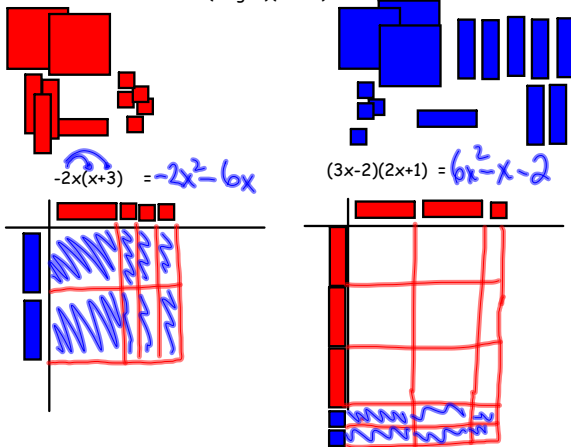
when we use algebra tiles we also think of
 $\text{Area} = (\text{length})(\text{width})$ 

Find the area using the tiles:

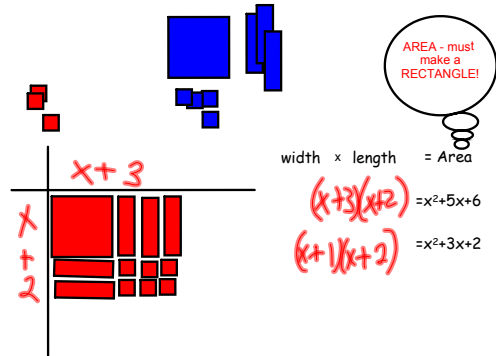
$$(\text{width})(\text{length}) = \text{Area}$$

$$2(x+4) = 2x+8$$

when we use algebra tiles we also think of
Area=(length)(width)



Now try a few backwards,
I'll give you the Area and you give me the length and width



Expand and simplify without Algebra tiles:

a) $(x+4)(x-5) = x^2 - 5x + 4x - 20 = x^2 - x - 20$

b) $6(4x-1)^2 = 6(16x^2 - 8x + 1) = 96x^2 - 48x + 6$

Try a few on your own....
...I will be choosing people randomly in a few minutes to put up your answer...

c) $(5x-1)(6x+5) = 30x^2 + 25x - 6x - 5 = 30x^2 + 19x - 5$

d) $(2x+3)(2x-3) = 4x^2 - 6x + 6x - 9 = 4x^2 - 9$

e) $(3x-2)^2 = 9x^2 - 6x + 4$

f) $-4(5x-3)^2 + 7 = -4(25x^2 - 30x + 9) + 7 = -100x^2 + 120x - 36 + 7 = -100x^2 + 120x - 29$

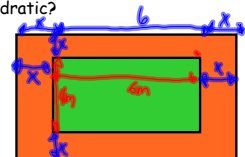
g) $5(2x-1)^2 - 3x(7x-2)(7x+2)$

Watch order BEDMAS

Ex: Find the area (you may use your algebra tiles)

Becca has a flower garden that is 4m wide and 6m long. She wants to build a stone path, of uniform width, around the garden.

- Find the area of the garden and the path together
- Find the area of just the path
- Is the area of the path linear or quadratic?



a) $A = lw$
 $A = (2x+4)(2x+6)$
 $= 4x^2 + 12x + 8x + 24$
 $= 4x^2 + 20x + 24$

b) $= 4x^2 + 20x + 24 - (4)(6)$
 $= 4x^2 + 20x$

c) Quadratic degree 2

ASSIGNED WK: P 85 # 1-5, 8 - 11, 13